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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/607,577
Filing Date: June 25, 2003
Appellant(s): BRITTAN ET AL.

Mr. Amit Singh
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 3/20/2008 appealing from the Office action mailed 9/7/2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,964,023	MAES et al	11-2005
WO 01/35575 A2	BRIDGER et al	5-2001

Suhm et al. "Multimodal Error Correction for Speech User Interfaces" ACM Transactions on Computer-Human Interaction, 8(1), 2001, pp.60-98

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1, 3, 9-10, 12, and 18-20 stand rejected under 35 U.S.C 103(a) as being unpatentable over Maes et al *(U.S. Patent: 6,964,023)* in view of Suhm et al *("Multimodal Error Correction for Speech User Interfaces, 2001)*. Claims 2, 4-8, 11, and 13-17 stand rejected under 35 U.S.C 103(a) as being unpatentable over Maes et al *(U.S. Patent: 6,964,023)* in view of Suhm et al *("Multimodal Error Correction for Speech User Interfaces, 2001)* and further in view of Bridger et al *(WO 01/35575 A2)*. These rejections are set forth in a prior Office Action, mailed on 9/7/2007, and are repeated below:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3, 9-10, 12, and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maes et al *(U.S. Patent: 6,964,023)* in view of Suhm et al *("Multimodal Error Correction for Speech User Interfaces, 2001)*.

With respect to **Claims 1 and 10**, Maes discloses:

A method and system for dynamically controlling usage of a resource by task entities respectively involved in processing different input modalities comprising:

Receiving inputs regarding: input mode usage by a user of the data processing device, modal requirements of a dialogue manager and an application or service at a bandwidth moderator *(resource manager that receives inputs regarding engaged input modalities and associated dialog applications, modality capabilities/states, and network path delay, Col. 37, Lines 4-16)*;

Determining a target relative usage of a data-processing resource *(determining required CPU cycles or input priorities to maintain a flowing dialog with an active application, Col. 37, Lines 4-16)*;

Wherein the relative average actual or allocated usage of the resource by the data-processing entities is dynamically allocated by said bandwidth moderator according to one or more of the following: actual usage of the different modalities by a user; confidence in the results of processing of each of the modalities; pragmatic

information on input modality usage *(allocating computer processing resources based on in use (active) modality engines, modality capabilities, and network delay, Col. 37, Lines 4-16; and Col. 35, Line 54- Col. 36, Line 7)*; and

Processing at least one of the input modalities using the resource as dynamically allocated by the bandwidth moderator *(modality engines for processing/recognizing a user input by utilizing a prioritized resource, Col. 37, Lines 4-16)*.

Maes further discloses multiple applications associated with various modalities and a corresponding computer processor *(Col. 7, Lines 40-45; Col. 31, Lines 15-34; and Col. 45, Lines 17-44)*.

Maes does not specifically suggest receiving a confidence score in a recognition process for resource allocation *(i.e., "and/or confidence in a recognition process")*. Suhm, however, recites using confidence scores to identify recognition errors and switch to another modality *(i.e., activating processing resources for a different input modality) (Pages 68, 71, 74-75, and 94)*.

Maes and Suhm are analogous art because they are from a similar field of endeavor in systems having multimodal input processing. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Maes with the confidence metric for resource allocation switching taught by Suhm in order to speed up correction of recognition errors *(Abstract, Page 60)*.

With respect to **Claims 3 and 12**, Maes further discloses:

The resource is processing power *(computer processing power allocated to active modality engines, Col. 37, Lines 4-16)*.

With respect to **Claims 9 and 18**, Maes further recites:

Controlling the allocation of the resource between task entities *(allocating computer processing resources based on in use (active) modality engines associated with a particular application, Col. 37, Lines 4-16; and Col. 35, Line 54- Col. 36, Line 7)*.

With respect to **Claims 19-20**, Maes discloses resource allocation based on data received at a resource manager comprising: engaged input modalities *(actual usage of the different input modalities)* and modality capabilities/states and network path delay *(pragmatic information on input modality usage)*, while Suhm discloses using confidence scores to identify recognition errors and switch to another modality, as both applied to Claims 1 and 10. Also, Maes only requires only one of the aforementioned items for resource allocation at a resource manager *(Col. 37, Lines 4-16)*.

Claims 2, 4-8, 11, 13-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maes et al in view of Suhm et al and further in view of Bridger et al *(WO 01/35575 A2)*.

With respect to **Claims 2, 4, 11, and 13**, Maes in view of Suhm discloses the system and method for allocating computer processing resources based on modality usage as applied to Claims 1 and 10. Maes further discloses multiple applications associated with various modalities *(Col. 7, Lines 40-45; and Col. 31, Lines 15-34)*. Maes in view of Suhm does not explicitly suggest resources comprising communication bandwidth and memory, however Bridger discloses such resource allocation *(Page 1, Line 32- Page 2, Line 10; and Page 7, Lines 15-29)*.

Maes, Suhm, and Bridger are analogous art because they are from a similar field of endeavor in processing for multiple input data types. Thus, it would have been obvious to a person of ordinary skill in the art, at the time of invention, to modify the teachings of Maes in view of Suhm with the resource management scheme taught by Bridger in order to prevent a server from overload while not wasting its usage *(Bridger, Page 1, Lines 19-30)*.

With respect to **Claims 5 and 14**, Bridger further discloses processing resources determined based on an input modality, wherein a single processing resource can be assigned to different modality types *(Page 7, Lines 7-29)*.

With respect to **Claims 6 and 15**, Bridger further recites the adjustment of related resources *(Page 7, Line 30- Page 8, Line 4)*.

With respect to **Claims 7 and 16**, Bridger further recites an allocation of resources based on a modality *(Page 7, Lines 7-14)* and further allocation for similar modality types *(Page 10, Lines 3-12)*.

With respect to **Claims 8 and 17**, Bridger further recites evenly dividing resources for all high priority tasks *(Page 9, Lines 11-23)* and further allocation for similar modality types *(Page 10, Lines 3-12)*.

(10) Response to Argument

With respect to independent claims 1 and 10, the appellants traverse the art rejection set forth in the Office Action from 9/7/2007 for two reasons.

The first alleged reason is that Maes et al *(U.S. Patent: 6,964,023)* does not disclose a “bandwidth” moderator because Maes only refers to "bandwidth" in the context of "describing an acoustic front end" for processing an audio input that can have variable sampling rates and signal bandwidth *(Appeal Brief, Page 8)*. The appellants continue to explain that the examiner's supplied reasoning in the Office Action from 9/7/2007 reinforces the appellants' position that Maes fails to teach a bandwidth moderator *(Appeal Brief, Page 9)*. Thus, in summary of this argument, the examiner notes that appellants are arguing that Maes' resource manager does not teach the moderator of the presently claimed invention because it is not a “bandwidth” moderator *(i.e., “bandwidth merely in the context of describing an acoustic front-end”, Appeal Brief, Pages 8-9)*.

In response to this set of arguments, the examiner first points to the language of the independent claims. Claim 1 sets forth that a “bandwidth moderator” operates by allocating "resources *("wherein a relative average actual or allocated usage of the resource by the data-processing entities is dynamically allocated by said bandwidth moderator")*. Claim 10 similarly recites "a moderator" for "adjusting a relative average actual or allocated usage of the *resource*". Additionally, claim 10 fails to even mention the term "bandwidth" in referring to the claimed "moderator". Thus, in the claimed invention, the “bandwidth moderator” *(as in claim 1)* or “moderator” *(as in claim 10)* is referring to an element that simply allocates usage of a system resource. There is no mention of any type of bandwidth allocation or modification in the independent claims. Therefore, the bandwidth moderator is simply a term used by the appellants to describe

a system element that manages a system resource. There is no requirement in the independent claims that a bandwidth should be considered.

Further support of this position can be found in the appellants' dependent claims and specification. In claim 2 it is mentioned that a resource can in fact be communication bandwidth, however, in claim 3 a resource is processing power, whereas in claim 4 the resource is memory. Dependent claims 11-13 recite similar subject matter. Such a claim scope for the term "resource" is additionally supported by the specification. For example, on page 6, it is described that "whilst the resource controlled by the moderator 70 in the Figure 2 example is channel bandwidth, the moderator can be used to control the relative usage by the input modalities of other limited *resources such as processing power and/or memory.*" Thus, according to the appellants' own definition, a "bandwidth moderator" or "moderator" is simply a processing element that manages allocation of a resource, of which there are several types.

In response to the appellants' comment that the examiner's statement in the Office Action from 9/7/2007 actually supports the appellant's position with respect to the independent claims *(Appeal Brief, Page 9)*. The examiner respectfully disagrees. As was pointed out above, a bandwidth moderator is simply a device that manages allocation of a resource, which is taught by Maes in the form of a resource manager *(Col. 37, Lines 4-16)*. The independent claims make no mention that bandwidth is allocated or modified and claim 10 fails to even mention the term "bandwidth". Thus, in making the statement that "Maes in view of Suhm does not explicitly suggest resources

comprising communication bandwidth and memory", the examiner was simply taking the position that Maes did teach a bandwidth moderator that allocates a resource, but not specifically in the form of a bandwidth. A further reference, Bridger et al *(WO 01/35575 A2)*, was supplied in support of this teaching. The fact that a bandwidth moderator can be a device that allocates bandwidth, however, is not considered until dependent claim 2, which is the claim to which the examiner was referring in making the preceding Office Action comment and to which the additional reference was applied. As the “bandwidth moderator” in claim 1 and “moderator” in claim 10 affect no change in bandwidth allocation, but instead merely change allocation of a “resource”, the examiner submits that the aforementioned comments do not support the appellants' position and merely fall in line with the reasonable interpretation of the "bandwidth moderator" or "moderator" as is detailed in the appellants' own claims/disclosure.

In light of the above described actual language of the independent claims, the further dependent claims, and the appellants’ specification, the examiner notes that a “bandwidth moderator” is nothing more than the appellants’ nomenclature for a processing element that allocates usage of a *resource*. While communication bandwidth can be one type of resource, this device alternatively controls resources in the form of processing power or memory. Thus, as per the appellants' own definitions the claimed “bandwidth moderator” or “moderator” is simply a processing element that manages a *resource*.

With this appellants-provided definition in mind, the examiner will now turn to the teachings of Maes. In column 37, lines 4-16, Maes details a resource manager for use

in a multi-modal system. The resource manager *(i.e., bandwidth moderator or moderator)* functions by allocating processor (CPU) priority for modality engines that are engaged by a user *("the conversational resource manager 820 prioritizes the allocation of CPU cycles or input/output priorities to maintain a flowing dialog with the active application)* in order to maximize processing speed *("flowing dialog with the active application")*. This resource manager also receives inputs regarding input mode usage by a user of the data processing device *(i.e., "engines engaged")*, modal requirements of a dialogue manager *("active applications", "capabilities", "state", Col. 37, Lines 4-16)*. Thus, since Maes' resource manager is a moderator that performs the same function as the "bandwidth moderator" and "moderator" *(i.e., it manages a resource, which can be a number of different resource types, based on a similar set of inputs)*, these arguments have been fully considered by the examiner, but are not convincing.

The second alleged reason is that Suhm et al *("Multimodal Error Correction for Speech User Interfaces, 2001)* actually teaches away from the claimed invention because it questions the use of confidence scores for error correction *(Amendment, Pages 9-10)*.

The examiner has fully considered these arguments, but respectfully notes that they are not convincing. First, Suhm makes no mention that confidence scores cannot be used at all and thus, does not provide a "teaching away". Second, Suhm does not "teach away from the claimed invention" because it questions the use of confidence scores for error correction. More specifically, the appellants' specification makes no mention of any type of error correction; it merely incorporates confidence scores for

resource allocation. Furthermore, the examiner notes that Suhm also discloses that classification errors can be minimized to counteract the effect of incorrect tagging, thus increasing their usability *(Page 75)*. Also important is that Suhm evidences that it is well known in the art to use confidence scores to switch between modalities with the added benefit of error correction *(i.e., resource allocation)* if one modality is returning poor results *(Pages 71 and 74-75)*. Finally, even in the case of an unreliable tagging system, Suhm notes that other alternative switching means can be used just as is claimed by the applicant *(Page 78)*. In other words, Suhm doesn't teach that confidence scores cannot be used, but instead can be used as an alternative to other options just as in the appellants' invention. Thus, the examiner respectfully submits that these arguments are not convincing.

The appellant traverses the art rejections of the further dependent claims for reasons similar to claims 1 and 10 *(Appeal Brief, Pages 10-11)*. In regards to these arguments, please see the above response directed towards claims 1 and 10.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/James S. Wozniak/

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